IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (currently amended) A method for determining whether ~~coping capacity of~~ a human or non-human mammal experiences stress effect arising from [[for]] exposure to a psychological stressor ~~in which coping capacity is defined as responsiveness of a whole blood cell sample to induction of superoxide production by a chemical inducer which stimulates superoxide production in neutrophils, said stressor also inducing superoxide production in neutrophils of a human or non-human mammal of the same species susceptible to said stresser~~, the method comprising:

(a) incubating neutrophils in ~~obtaining~~ a test ~~whole blood~~ sample comprising whole blood obtained from said human or non-human mammal with or without a chemical inducer capable of stimulating superoxide production in neutrophils, said test sample being taken after exposure of said human or non-human mammal to said stressor ~~for a time period whereby neutrophils in a human or non-human mammal of the same species susceptible to said stressor will exhibit increased superoxide~~;

(b) determining ~~basal~~ superoxide production in said test sample with or without said chemical inducer under in vitro conditions at a time point when neutrophils in a control sample comprising whole blood, which is free or substantially free of stress-induced activation or derived from an individual of the same species as said human or non-human mammal and not exposed to said stressor, will exhibit chemically-induced superoxide production, wherein in said test sample there is increased chemically-induced superoxide production above basal superoxide production in the absence of the chemical inducer ~~induction of superoxide production by a chemical inducer~~;

(c) incubating neutrophils in said control sample with or without said chemical inducer; ~~determining superoxide production in said test sample in the presence of said chemical inducer after a time period and under conditions suitable for superoxide production to be observed in a control whole blood sample, said~~

~~control sample being free or substantially free of stress-induced activation or at least derived from one or more humans or one or more non-human mammals of the same species subject to the same conditions minus said stressor;~~

(d) determining [[the]] superoxide production in said control sample with or without said chemical inducer under said in vitro conditions at said time point, wherein in said control sample there is increased chemically-induced superoxide production above basal superoxide production in the absence of the chemical inducer ~~chemically-induced superoxide production in (c) above said basal superoxide production~~; and

(e) comparing increased chemically-induced superoxide production above basal determined in said test sample with increased chemically-induced superoxide production above basal determined in said [[a]] control sample ~~as defined in (c) under the same in vitro conditions~~;

wherein lower increased chemically-induced superoxide production above basal in said test sample compared to increased chemically-induced superoxide production above basal in said control sample is indicative of stress effect caused by said stressor and, when such stress effect is indicated, residual capacity of neutrophils in said test sample to increase ~~the degree of chemically-induced~~ superoxide production above basal after contact with said chemical inducer ~~in said test sample~~ is a measure of coping capacity for said exposure to said stressor.

Claims 2-4 (canceled)

5. (previously presented) A method according to claim 1, wherein said test sample is obtained from a human.

Claim 6 (canceled)

7. (previously presented) A method according to claim 1, wherein said test sample is obtained from a farmed animal.

8. (previously presented) A method according to claim 1, wherein said test sample is obtained from a wild mammal.

9. (currently amended) A method according to claim 1, wherein the chemical inducer capable of stimulating superoxide production in neutrophils is phorbol myristate acetate (PMA), N-Formyl-Met-Leu-Phe (fLMP chemotactic peptide), zymosan, lipopolysaccharide or adrenaline.

10. (currently amended) A method according to claim 1, wherein superoxide production is detected using luminol or isoluminol as an amplifier and ~~the resulting~~ chemiluminescence is measured.

11. (currently amended) A method according to claim 1, wherein the chemical inducer capable of stimulating superoxide production in neutrophils is phorbol myristate acetate (PMA), superoxide production is detected using luminol as an amplifier and ~~the resulting~~ chemiluminescence is measured.

12. (currently amended) A method of screening for a compound having stress-relieving activity ~~drug~~, the method comprising:

(a) administering a test compound to a human or non-human mammal;

(b) exposing said human or non-human mammal to a psychological stressor and measuring coping capacity using a method according to claim 1; and

(c) comparing coping capacity after administration of the test compound to coping capacity in the absence of the test compound, wherein an increase in coping capacity after administration of the test compound is indicative of stress-relieving activity ~~ability~~ of said test compound.

13. (previously presented) A method according to claim 12, wherein the test compound is administered to a non-human mammal.

14. (currently amended) A method according to claim 12, further comprising synthesizing a stress-relieving drug which is a test compound identified by said method, and/or formulating the drug into a pharmaceutical composition.

Claim 15 (canceled)

16. (previously presented) A method of treating a human or non-human mammal suffering from stress which comprises providing a stress-relieving treatment, such as administering a stress-relieving drug, to a human or non-human mammal identified as suffering from stress using a method according to claim 1.

17. (previously presented) A method of testing the efficacy of a proposed stress-relieving treatment which comprises exposing a human or non-human mammal to a psychological stressor in the presence and absence of said treatment and determining their coping capacity using a method according to claim 1.

Claims 18-23 (canceled)

24. (previously presented) A method according to claim 7, wherein the farmed animal is a cow, pig, sheep, lamb or poultry.

25. (new) A method for determining whether a human or non-human mammal is experiencing stress effect arising from exposure to a psychological stressor, the method comprising:

(a) contacting neutrophils in a test sample comprising whole blood obtained from said human or non-human mammal with or without a chemical inducer capable of stimulating superoxide production in neutrophils under conditions suitable for such stimulation;

(b) determining increased chemically-induced superoxide production above basal, which is superoxide production in the absence of chemical inducer, in said test sample at a time point when neutrophils in a control sample comprising whole blood, which are free or substantially free of stress-induced activation or derived from a human or non-human mammal not exposed to said stressor, will exhibit chemically-induced superoxide production under the same stimulation conditions; and

(c) comparing increased superoxide production above basal in said test sample with increased superoxide production above basal in said control sample at said time point;

wherein lower increased chemically-induced superoxide production above basal in said test sample compared to increased chemically-induced superoxide production above basal in said control sample is indicative of stress effect caused by said psychological stressor and, where such stress effect is indicated, the lower increased chemically-induced superoxide production above basal in said test sample is a measure of coping capacity for exposure to said stressor.

26. (new) A method according to claim 25, wherein said test sample is obtained from a human.

27. (new) A method according to claim 25, wherein said test sample is obtained from a farmed animal.

28. (new) A method according to claim 25, wherein said test sample is obtained from a wild mammal.

29. (new) A method according to claim 25, wherein the chemical inducer capable of stimulating superoxide production in neutrophils is phorbol myristate acetate (PMA), N-Formyl-Met-Leu-Phe (fLMP chemotactic peptide), zymosan, lipopolysaccharide or adrenaline.

30. (new) A method according to claim 25, wherein superoxide production is detected using luminol or isoluminol as an amplifier and chemiluminescence is measured.

31. (new) A method according to claim 25, wherein the chemical inducer capable of stimulating superoxide production in neutrophils is phorbol myristate acetate (PMA), superoxide production is detected using luminol as an amplifier and chemiluminescence is measured.